

The most important article in the book is the concluding one, by the Editor, Mr. J. G. Goodechild, and is on "Ice-work in Edenside and some of the adjoining parts of North-western England," in which the author brings together the results of his investigations upon the glacial phenomena of the region in question. Some of these results have already been indicated by Mr. Goodechild in papers published in the 'Quarterly Journal of the Geological Society' and elsewhere; but he has done good service by summarizing his observations upon such an interesting district in this convenient form.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

February 8, 1888.—Prof. J. W. Judd, F.R.S.,
President, in the Chair.

The following communications were read:—

1. "On some Remains of *Squatina Cranci*, sp. nov., and the Mandible of *Belonostomus cinctus*, from the Chalk of Sussex, preserved in the Collection of Henry Willett, Esq., F.G.S., Brighton Museum." By A. Smith Woodward, Esq., F.G.S.

The remains referable to *Squatina* consist of a crushed skull, with the mandibular and hyoid arches, and an associated fragment of the pectoral fin with dermal tubercles. The fish was probably about 30 inches long. There are some difficulties in the way of interpretation, but the form and relative proportions of the cranium, &c., appear to be similar to those of the living representative of the genus. The dentition is not completely preserved; the teeth near the symphysis of the mandible are relatively high and slender, while the opposing teeth are small. The great relative size of the spinous dermal tubercles serves to distinguish it from species of *Squatina* already known. The anterior lower teeth are also more slender than in the existing *S. angelus*.

No specimen of *Belonostomus* has hitherto revealed the precise characters of the dentition or the relations of the bones. This deficiency is now supplied. The two rami occupy only one half the entire length of the jaw, the anterior half being formed by the elongated presymphysial bone, which is provided with a powerful prehensile dentition. The character of the teeth was described by the Author: the large median teeth end abruptly at the posterior extremity of the presymphysial element, but the small lateral teeth are continued backwards upon the rami of the jaw, increasing in size and becoming relatively shorter. Further details were given, and

the evidence shows that the original specimens described by Agassiz, as portions of the mandibular rami of *Belonostomus cinctus*, are really fragments of the presymphysial bone of this species. Some of the relations of *Belonostomus* and *Aspidorhynchus* were pointed out.

2. "On the History and Characters of the Genus *Septastræa*, D'Orbigny (1849), and the Identity of its Type Species with that of *Glyphastræa*, Duncan (1887)." By George Jennings Hinde, Ph.D., F.G.S.

D'Orbigny founded the genus *Septastræa* on the characters of a coral from the Miocene strata of Virginia, which was named *S. subramosa*, but no specific description was given. In the same year (1849), Edwards & Haime accepted the genus as valid, but placed *S. subramosa* as a synonym of *Astræa ramosa*, Defrance—an apparently recent species of coral which had previously only been informally described by Defrance. They also included in the genus *S. Forbesi*, the original specimen of which was from the Miocene of Maryland, and at that time in the collection of the Geological Survey in London. Later on, in 1852, D'Orbigny claimed that *S. Forbesi* was but a synonym of his *S. subramosa*. There is good reason for regarding this as correct, but owing to the fact that D'Orbigny's name *subramosa* was merely nominal and without description, the later name of *S. Forbesi*, Edwards & Haime, must be allowed to stand for the type of the genus *Septastræa*.

In 1861 de Fromental, and in 1867 Prof. Duncan included in *Septastræa* several species of Jurassic and Liassic corals, which, however, have no generic relationship to the type form of the genus from the Miocene Tertiary.

In 1887, Prof. Duncan read a paper before the Geological Society in which he adopted *Septastræa Forbesi*, E. & H., as the type of a new genus *Glyphastræa*, thus leaving in *Septastræa* those Liassic and Jurassic species placed therein by himself and de Fromental. As this proceeding is contrary to recognized rules of nomenclature, the genus *Glyphastræa* will have to be abolished.

In the type form of *Septastræa*, now in the British Natural-History Museum, the walls of the corallites, though closely apposed, are quite distinct: the theca is formed by the extension of the septal laminae; the walls and septa in the lower portion of the corallites are very thin, but the upper portion of the corallites are so infilled with compact stereoplasm that the calices are extremely shallow when mature. There is no true columella, only a pseudo-columella, formed by the union and partial involution of the inner septal margins. The increase is exclusively by marginal gemmation; fission does not occur. In some cases linear perforations between the septa are shown; these appear to be for the insertion of the mesenterial muscles.

The septa in *Septastræa* consist of a central layer, dark in micro-

scopic sections, the primary layer of v. Koch, or centre of calcification of Bourne and Fowler, enclosed on both sides by layers of compact subcrystalline stereoplasm. In longitudinal fractures the septa frequently split in the centre of the dark or primary layer, and thus show that each half of the septum consists of a dark and light portion, and the median face of each septal lamina exhibits transverse growth-lines, not unlike those of an epitheca, beneath which are delicate longitudinal ridges and grooves. The thecal wall has a similar structure to that of the septal laminae, of which it is an extension.

There is a close correspondence in the septal and thecal structure of *Septastraea* and that of the recent and fossil genus *Flabellum*, and in this genus also the septa occasionally split longitudinally and show the same growth-lines on their median faces.

Only two species are included in *Septastraea*, as now defined, viz. *S. Forbesi*, E. & H., and *S. (Columnaria?) saxradiata*, Lonsdale, sp.

February 29, 1888.—W. T. Blanford, LL.D., F.R.S.,
President, in the Chair.

The following communication was read:—

“Appendix to Mr. A. T. Metcalfe’s paper ‘On Further Discoveries of Vertebrate Remains in the Triassic Strata of the South Coast of Devonshire, between Budleigh Salterton and Sidmouth.’”
By H. J. Carter, Esq., F.R.S.

A microscopic examination of certain calcareous pellet-like bodies, containing plates possessing a bony structure, and referred to in Mr. Metcalfe’s paper in the Society’s Journal for May 1884, revealed the fact that the plates resembled the scales of the Bony Pike, and also the scales contained in certain Liassic coprolites which were identical in appearance with the Triassic pellets. The Author concluded that the latter were the coprolites of Triassic amphibians which fed upon the same kind of Ganoid fishes as the Ichthyosaurs of the Lias.

The Author had also examined microscopically the so-called “spine,” No. 1, fig. 2, and the jawbone, No. 2, of Mr. Metcalfe’s paper, and observed that there appeared to be no difference between the structure of the latter and that of reptilian bones, whilst its structure is different from that of the Lepidostean scale; with regard to the former, he stated that it was totally different from the spines of two species of *Hybodus* examined, and considered that there were no grounds for considering it a spine.